



Spring 2004

# RMA Newsletter

Resource Modeling Association

[www.resource modeling.org](http://www.resource modeling.org)

## *From the President*

It's late March. Ithaca has just had its last (we hope) major snowfall, and those RMA members in the Northern Hemisphere are thinking about Spring. I just returned from Norway, where I gave some lectures on the economics of forestry and biodiversity. One of the papers on my syllabus was a recent article by Brock and Xepapadeas which appeared in the December, 2003, issue of the *American Economic Review*, entitled, *Valuing Biodiversity from an Economic Perspective: A Unified Economic, Ecological, and Genetic Approach*. The authors develop a model where farmers choose the mix of two crops that have a differential productivity *vis-a-vis* a parasite. One of the plant varieties (Variety One) has the ability to kill parasites with a particular (A1) gene, although it is susceptible to homozygous parasites of the (A2A2) genotype. The second plant variety (Variety Two) is susceptible to all genotypes. The optimal solution is to maintain the genotypic diversity of the parasite population and the productivity advantage of Variety One. This prevents the parasite from evolving exclusively to the (A2A2) variety and the dissipation of the productivity advantage of Variety One. If there are no "property rights" to the genetic composition of the parasite, that is, if there is no economic agent with an incentive and ability to manage genetic diversity, profit-seeking farmers will exclusively plant Variety One (monoculture) until its productivity advantage is exhausted and it is identical to Variety Two, in terms of its susceptibility to the parasite that is now exclusively of the (A2A2) genotype. Brock and Xepapadeas measure the loss in biodiversity as the difference between the steady-state value function for the

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## Update on RMA's journal: *Natural Resource Modeling*

By Catherine A. Roberts, NRM Editor

Several exciting changes are underway at NRM! Regular articles in the RMA newsletter will help keep everyone apprised of journal happenings.

First, some information about the new editor of NRM. My name is Catherine A. Roberts and I'm an Associate Professor of Applied Mathematics and a member of the Environmental Studies faculty at the College of the Holy Cross in Worcester, Massachusetts, USA. You can reach me at [NRM@holycross.edu](mailto:NRM@holycross.edu). My doctorate degree is in applied mathematics from Northwestern University (1992). My research has been predominantly in nonlinear integral equations modeling diffusive phenomena, but more recently has embraced natural resource modeling with projects for the Grand Canyon National Park. I'm presently on the boards of RMA and the Association for Women in Mathematics.

As of January, NRM has moved toward electronic submission of manuscripts. Details can be found at the journal's website at <http://math.la.asu.edu/~rmmc/>.

We have some special issues in the pipeline. Issues devoted to the annual meetings of the RMA will continue to be published. Look for the special issue for the 2002 RMA meeting (John Hearne, Editor) soon. The special issue for the 2003 RMA meeting will be edited by Bob Fray. Two special issues will arise from sessions at the 2004 Joint Mathematics Meeting, edited by Horst Thieme and Suzanne Lenhart, respectively. If you would like to propose a special issue topic, please contact me to discuss it.

We are also moving toward simplifying web access to the journal. RMA members will be assigned a username and password by simply sending an email request to [NRM@ASU.EDU](mailto:NRM@ASU.EDU). Go for it!

As the new editor, my first task was to reshape the editorial board. This will be an on-going process; for example, I'm currently working to add expertise in forestry to the board. Nonetheless, the current editorial board is as follows:

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### Editor

Catherine A. Roberts, College of the Holy Cross

### Senior Advisory Council

Roland Lamberson, Humboldt State Univ.

Robert McKelvey, Univ. Montana

### Senior Editors

Biology	J.M. Cushing	Univ. Arizona
Fisheries	Jim Ianelli	Alaska Fisheries in Seattle
Game Theory	Mike Mesterton-Gibbons	Florida State
Conservation	E.J. Milner-Gulland	Imperial College, London
Ecosystems	Shandelle Henson	Andrews Univ., MI
Economics	Stein Steinshamn	Norwegian Sch of Econ. & Bus. Admin., Norway
Forestry & Wildlife	Gregory S. Amacher	Virginia Polytech. Inst. & State Univ.

### Associate Editors

Resource Policy	Tony Charles	St. Mary's Univ. Canada
Economics	Harry Clarke	La Trobe Univ., Australia
Economics	Jon Conrad	Cornell
Fisheries	Ray Hilborn	Univ. Washington
Ecology	Vincent Hull	Laboratorio Centrale di Idrobiologia, Italy
	Graziela Ana Canziani	Universidad Nacional del Centro, Argentina
Agronomy	Richard Plant	UC Davis
Mathematics	Bill Reed	Univ. of Victoria, Canada
Fisheries	Jon Schnute	Pacific Bio. Station, Canada
Fisheries	Tony Smith	CSIRO Marine Labs, Australia

In addition to thanking everyone on the board for their expertise and service, it is my pleasure to extend special appreciation to outgoing editor Rollie Lamberson. Thanks for your generous service! Thanks, also, to outgoing senior editor Bob Haight for several years of reliable assistance handling manuscripts in forestry and wildlife. We are all grateful for contributions from departing editors (Bob Haight, Sharon Brown, Yosef Cohen, Karl-Gustaf Lofgren, Ashley Mullen, Rob Van Kirk).

We would also like to welcome, especially, Shandelle Henson, Graziela Ana Canziani and Gregory Amacher who join NRM as new editors. (Look for additional information about them in the next issue of RMA Newsletter.)

Because I'm clearly a big fan of NRM, I'd like to see us all work toward increasing the profile of the journal. Please encourage colleagues to join us! I will gladly send you a packet of fliers if you have an opportunity to distribute them at a conference. Please send me any ideas or thoughts you have about NRM to [NRM@holycross.edu](mailto:NRM@holycross.edu).

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two-variety system and the steady-state value function for the stable monoculture.

The article demonstrates the value of diversity in scholarship. By reading the literature in mathematical ecology concerned with host-parasite models, the state variables describing an agricultural economy were expanded to include the genetic composition of a species which would not normally enter the "accounting system." The paper also demonstrates the power of mathematics, as a language, to bridge academic disciplines. These insights are not new or surprising to RMA members. But it is encouraging to see the premier economics journal acknowledge and validate good research spanning economics and ecology. (It, of course, helped that Brock is a widely-acclaimed economic theoretician.)

With regard to our own mission of publishing and presenting high-quality, disciplinary, and inter-disciplinary research, read carefully the updates on the positive changes being implemented by Catherine Roberts, Editor of Natural Resource Modeling, and the up-coming conferences in Melbourne (December, 2004) and Arcata (June, 2005). Remember, the RMA is a participatory association, small enough that individual members can make a positive difference. Also, the concept of extending resource modeling, via sessions at other association meetings (math, economics, ecology), is a great way to bring a higher profile to the RMA and can lead to interesting, special issues of Natural Resource Modeling. So, be creative, get involved, and contribute to our diverse association.

We are excited about the venue for the 2006 RMA Conference, Norway! We thank Stein Steinshamn for agreeing to host this meeting.

—Jon Conrad

## **UPCOMING MEETINGS**

ECM-04, Fourth European Conference on Ecological Modelling  
EAML-04, Fourth International Workshop on Environmental Applications of Machine Learning

Bled, Slovenia, September 27 - October 1, 2004.

Deadline for submitting two-page abstracts: March 20.

More information on the events can be found at the web site  
<http://www-ai.ijs.si/SasoDzeroski/ECMEAML04/>

## 2004 World Conference

*Understanding and managing complex systems*

**Come to Melbourne!** 12-15 December, 2004

Early signs for an excellent conference are very promising. There have been many expressions of interest from all over the world and an exciting scientific program can be expected. Further, Melbourne is a wonderful destination especially in the southern summer months. The social program will ensure you get a chance to enjoy some of the sights. Flights will be full in December so plan now and book early. Watch the RMA website for updates.

To receive further announcements and to help us with planning please pre-register NOW by emailing the following details to: [rma2004@rmit.edu.au](mailto:rma2004@rmit.edu.au)

Name:... Address:... Tel:... Email:...

Intending to present a paper: Y/N, tentative title ...



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**RMA website: [www.resource modeling.org](http://www.resource modeling.org)**

### Deadlines

Registration: 15 October, 2004 Abstracts: 12 November, 2004.

Proceedings: Those wishing to have papers considered for a special issue of Natural Resource Modeling have a choice of two deadlines. Authors submitting full papers before 15 September 2004 will be notified of acceptance by 15 November. The alternative date is end of December but notification of acceptance (or rejection) will only be received by end of March.

### Invited Plenary Speakers

Mark Burgman, University of Melbourne  
Wayne Getz, University of California, Berkeley  
Hugh Possingham, University of Queensland

Confirmation is awaited from a prominent fisheries modeller.

**Costs:** These will be finalised soon and placed on the website. Tentative estimates are Early Registration fee AU\$200 (members), students AU\$100. Accommodation: AU\$106 (hotel) or AU\$53 (B&B in comfortable student residence).

**Other Events:** The meeting will be followed on Thursday 16 December by a special workshop on the mechanisms and role of density dependence in resource dynamics. All are welcome.

ICOTA6 (The 6th International conference on Optimization: Techniques and Applications) will be held in Ballarat on December 9-11, 2004 (see [www.ballarat.edu.au/icota](http://www.ballarat.edu.au/icota))

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### COMING ATTRACTIONS

Planning for the 2005 RMA conference is in the capable hands of Rollie Lamberson. The beautiful campus of Humboldt State University in northern California will be the site. The inaugural meeting of RMA in 1982 and the 10th meeting were held there. HSU is adjacent to redwood forest and about 3 miles from the ocean, but has ocean views. The town of Arcata is about a 1 hr flight, or 5 hr drive (through wine country), from San Francisco. The dates are Tuesday, June 14 through Friday June 17. Our meeting will overlap with that of the Cooper Ornithological Society (also at HSU). Participants in either meeting will be allowed to freely go back and forth between them to attend sessions of interest. We plan for a special session on individual-based models. The Cooper Society is planning a day long special session on spotted owls. Opportunities for pre and post conference outings abound: white water rafting, hiking and backpacking in the redwoods, hiking the lost coast, ....